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ABSTRACT

From 300 introductory psychology students, 40 female "snake phobics" were selected to test the hypothesis that distraction paired with fearful imagery is effective in alleviating the "phobia." Subjects were divided into three treatment groups and a control group: H+PI (fear hierarchy plus pleasant imagery as distraction), H+P (hierarchy plus working a puzzle as distraction), H+R (hierarchy plus relaxation, i.e., traditional desensitization), and E (expectancy-relaxation + pleasant imagery, as placebo control). Groups were matched on the degree of approach to snake, and subjective report of snake-fear. Therapy was conducted in small groups and lasted 3.5 hr. spread over four sessions. There was no statistically significant difference among groups, but all groups improved more than would be expected from no treatment of any kind. Implications of the surprising improvement of the expectancy groups were discussed. The failure to find differences among the treatment groups suggested that distraction may be an alternative to relaxation in desensitization. (Author)

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DISTRACTION AS AN ALTERNATIVE TO RELAXATION IN SYSTEMATIC DESENSITIZATION THERAPY[1]

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Abstract: From 300 introductory psychology students, 40 female "snake phobics" were selected to test the hypothesis that distraction paired with fearful imagery is effective in alleviating the "phobia". Subjects were divided into three treatment groups and a control group: H+PI (fear hierarchy plus pleasant imagery as distraction), H+PU (hierarchy plus working a puzzle as distraction), H+R (hierarchy plus relaxation, i.e., traditional desensitization), and E (expectancy-relaxation + pleasant imagery, as placebo control). Groups were matched on the degree of approach to snake, and subjective report of snake-fear. Therapy was conducted in small groups and lasted 3.5 hr. spread over four sessions. There was no statistically significant difference among groups, but all groups improved more than would be expected from no treatment of any kind. Implications of the surprising improvement of the expectancy groups were discussed. The failure to find differences among the treatment groups suggested that distraction may be an alternative to relaxation in desensitization.

Wolpe's Psychotherapy by Reciprocal Inhibition generated a tremendous volume of research, and the resultant therapies are becoming popular. Two conclusions are generally accepted: (a) systematic desensitization is effective in eliminating specific fears and anxieties (Paul, 1969), and (b) specific mechanisms or processes underlying desensitization have yet to be detailed (Buchwald & Young, 1969). Among the ideas yet to be thoroughly tested is that any of a variety of procedures can be substituted for relaxation in systematic desensitization (Nawas, Welch, and Fishman, 1970).

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A purpose of this study was to test whether or not either pleasant imagery or solving a puzzle could be substituted for relaxation without any loss of efficiency in reducing snake fear among college students.

METHOD

Forty female subjects (Ss) were selected from a group of 300 introductory psychology students at Bradley University. Preliminary screening was done using the Fear Survey Schedule of Geer (1965).

Volunteers with the highest levels of fear and avoidance of snakes were chosen using the Behavior Avoidance Test (BAT) of Lang & Lazovik (1963) and the Fear Thermometer (FT) of Walk (1956). The instructions for the FT were altered such that Ss rated their fear at each step of the BAT. This makes it possible to compare pre- and post-treatment self reports of fear to the same BAT stimulus item. The rationale of this procedure was discussed by Miller (1967). The instructions for the tests were delivered using a tape recording.

Ss were haphazardly assigned to one of four treatment groups (n=10) with the exception that each group was nearly equal on initial levels of aversion to snakes. The treatments were: (a) systematic desensitization (H + R), presentation of a fear hierarchy with instructions to relax. (b) pleasant imagery distraction (H + PI), the same treatment as systematic desensitization except that Ss were told to imagine pleasant scenes instead of being told to relax. (c) puzzle as distraction (H + PU), same treatment as the first two groups, except that instead of relaxation or pleasant imagery Ss worked at a puzzle on the same schedule as the other Ss were relaxing and imaging. (d) expectancy control (E), same amount of time in the therapy room but there was no fear hierarchy and the Ss received relaxation instructions and pleasant visual images.

Following initial screening, final S selection and pre-treatment fear and avoidance testing was conducted in a corridor approximately 7 m. long, with a 1 m.

long live boa snake in a plexiglas cage at the far end of the corridor. Distance from the snake was marked off on the floor. The experimenter escorted the S to the test corridor and asked the S to approach, as close as possible, the snake (BAT), and rate his fear (FT).

Treatment was conducted with Ss sitting or reclining in a lounge chair, and all treatment instructions were delivered via a tape recorder. Treatments were run in groups of 5 Ss. Treatment, lasting approximately 3.5 hr., was conducted by eight graduate student therapists who had been trained in systematic desensitization. Therapists were instructed, in particular, to behave in ways which suggested confidence in the treatment. The first treatment session was a 20 min. "training" session during which all Ss were instructed in the procedures specific to their treatment group, i.e., relaxation, puzzle solving, or pleasant imagery. Subsequent sessions began with a 4 min. warm-up using the relevant procedure.

All desensitization groups used a standard 20 item fear hierarchy taken from the BAT. Each hierarchy item was presented 3 times, with exposure to each item totaling 35 sec. Interspersed between each hierarchy item, presentation was a 90 sec. interval of: relaxation (H + R), pleasant imagery (H + PI), or puzzle solving (H + PU). Relaxation and pleasant imagery procedures were similar to those described by Miller (1967). The puzzle solving exercises (H + PU) used a complex, mechanical, "mind-teasing", puzzle which was accompanied by instructions in isometric exercises to maintain muscle tension. Ss were seated in an upright position.

The expectancy control group (E) was instructed to imagine the 20 pleasant scenes, and each scene was presented in a manner identical to that of the other groups. Between each scene presentation was 90 sec. of relaxation. The E group thus received treatment and therapist contact time equal to that given to the other groups.

RESULTS

Analysis of variance on the pre-treatment BAT and FT scores indicated no reliable differences among the groups. The mean change score on the BAT from pre-treatment to post-treatment tests was less for the E group than any other group (Table 1). A number of statistical analyses of the BAT and FT data, e.g., analysis of variance on difference scores and analysis of variance on the post-treatment scores, however, indicated that differences among the groups following therapy was not great enough to meet standards of statistical significance. Analysis of the data of the follow-up measures indicated that the differences among groups were not reliable. No matter what measure was used nor how the data were analyzed, the result was the same; the three analogues of a desensitization treatment procedure did not differ significantly from each other, and were only slightly and non-significantly superior to the expectancy treatment control.

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Table 1 - About here

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DISCUSSION

Since many studies had demonstrated that a "no treatment" condition leads to only slight or no changes on the BAT (Paul, 1969), an expectancy manipulation group was selected as a more stringent control with which to compare the efficacy of the three treatments. Obviously, any therapy must surpass the expectancy baseline if it is to have significant treatment value (Rosenthal & Frank, 1958). The surprising improvement noted in the E group prompted a re-examination of desensitization research literature with regard to the placebo phenomena in college student

populations. A close examination of approximately 18 studies which used an expectancy control group revealed that more than half of the studies reported improvement in the expectancy group.

The obvious implication of this finding is the need for much more research on the expectancy variable in college populations. It is suspected that college students, due to their intelligence, interest, and cooperativeness with research programs, may be unusually susceptible to expectancy manipulation. Studies attempting to manipulate expectancy should be run to determine how much of the variance attributed to desensitization could be more appropriately attributed to expectancy. Indeed the one study which directly compared expectancy manipulation with desensitization in college students (Marcia, Rubin, & Efram, 1968) reported that expectancy manipulation was equally as powerful as desensitization.

It could be argued that all of the treatments in this study were equally ineffective in reducing fear or anxiety since the absence of a no-treatment group prevented statistical verification of treatment efficacy. This is unlikely, however, since the mean improvement of each of the desensitization treatment groups on the BAT, i. e., 4 steps, is nearly identical to the improvement following desensitization reported in a similar study which was found to be significant when compared to a no-treatment control group (Miller & Nawas, 1970). It seems safe to conclude, therefore, that each of the three treatments was effective in reducing anxiety.

The result that no reliable differences were found between the desensitization treatments using either relaxation or distraction procedures suggests the need for further research to examine the efficacy of distraction. If distraction continues to be found to be an effective anxiety reduction procedure, several implications are apparent: First, the desensitization process may be speeded up if the time consuming relaxation training period can be eliminated. Since distraction requires

no training, practical economies in terms of therapist time would result. Second, research which attempts to discover the relative strength of various distractors should be initiated. More powerful techniques should increase therapeutic efficacy. Third, a new alternative to relaxation would open possibilities for studies of the most effective procedures for eliminating a specific type of fear in specific individuals. Long range, specific behavior therapy techniques tailored to the individual and the type of fear, could result.

The results of this study by themselves answer few, if any, questions. The study does, however, lend support to several other studies which confirm the role of expectancy in the outcome of desensitization therapy. In addition, the study lends support to a hypothesis that distraction may be an alternative to relaxation in desensitization (Nawas, Welch, & Fishman, 1970). Finally, the study confirms the need for much more basic research on the models and mechanisms underlying desensitization.

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TABLE I

BEHAVIOR AVOIDANCE TEST SCORES

GROUP	$\bar{X}$			$\bar{X}$ Change	
	Pre	Post	Follow-up	Pre-Post	Pre-Follow-up
E	12.2	15.2	16.5	3.0	4.3
E + K	11.5	15.9	16.0	4.4	4.5
E + PI	11.1	15.7	16.5	4.6	5.4
E + PU	11.5	16.5	16.8	5.0	5.3

FOOTNOTE

1. This paper was presented at the 13th Inter-American Congress of Psychology, December 18 through 22.